

Low umbilical cord pH at birth linked to death and brain damage

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Low umbilical cord blood pH at birth is strongly associated with serious outcomes such as infant death, brain damage and the development of cerebral palsy in childhood, concludes a study published in the British Medical Journal today.

This is the first BMJ research paper to carry a continuing medical education (CME) credit through a new collaboration between the BMJ and Cleveland Clinic.

The researchers say these findings justify increased surveillance of babies born with a low cord pH and call for further research to explore whether all babies should have their umbilical cord blood tested.

For some time, doctors have thought there might be a link between umbilical artery pH and adverse outcomes. This stems from the fact that, if a baby is deprived of adequate oxygen during labour (hypoxia), the pH of blood in the umbilical cord drops. Hypoxia is the most common cause of brain damage and premature or very small babies are at most risk.

But so far, the evidence for such a link has been inconsistent. Current guidelines also question whether umbilical artery pH can accurately predict infant death or the development of cerebral palsy.

So a team of researchers based in Birmingham analysed the results of 51 studies, involving almost half a million babies, to evaluate the strength of the association. Study quality was variable, but this did not seem to

influence the overall results.

They found that low arterial umbilical cord pH had a strong and consistent association with infant death and [brain damage](#) as well as [cerebral palsy](#) in childhood.

Based on these findings, they call for increased surveillance of babies born with a low arterial cord pH, and for further research to explore the cost effectiveness of doing this test in all babies.

In an accompanying editorial, James Neilson, Professor of Obstetrics and Gynaecology at the University of Liverpool, says that, given the findings of this study, "we should aim to reduce the number of babies born with a low cord pH, without increasing unnecessary obstetric intervention." He hopes that this can be achieved by more hands-on input to labour ward care by fully trained obstetric specialists and the use of computerised intelligent systems to guide decision making by obstetricians and midwives.

In the meantime, he supports current recommendations that [umbilical cord](#) blood should only be tested when there has been concern about the baby either in labour or immediately following birth.

Provided by British Medical Journal

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